TRANSPORTATION AND NATURAL RESOURCES
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November 12, 2009

Jaya Zyman-Ponebshek, Team Leader
Texas Commission on Environmental Quality
Storm Water and Pretreatment Team (MC148)
P.O. Box 13087
Austin, Texas 78711-3087

Water Program Manager, Region 11 Office
Texas Commission on Environmental Quality
2800 South IH 35, Suite 100
Austin, Texas 78704-5700

Re: Phase II MS4 Annual Report Transmittal for Travis County MS4
TPDES Permit Number TXR040327

Dear Ms. Zyman-Ponebshek:

This letter serves to transmit the Year 2 Annual Report for the Texas Pollutant Discharge Elimination System (TPDES) Small Municipal Separate Storm Sewer System (MS4) General Permit, Authorization Number TXR040327 for the Travis County MS4. Travis County received final TCEQ approval of our Storm Water Management Program (SWMP) and the above-referenced Permit number May 20, 2009.

In addition to the Travis County Transportation & Natural Resources Department (TNR), other Travis County departments performing key SWMP activities include: the Travis County Attorney's Office Environmental Crimes Unit, the Austin/Travis County Health and Human Services Department (ATCHHSD) Environmental and Consumer Health Unit, the Texas AgriLife Extension Office in Travis County, the Travis County Sheriff's Office Environmental Crimes Unit, and the Department of Emergency Services.

A separate Notice of Change (NOC) will be submitted based on the fact that changes have been proposed for Year 3. As required by the general permit, a copy of this submittal has also been mailed to the TCEQ's regional office in Austin, Texas.

Sincerely,

Joseph P. Gieselman, Executive Manager
Transportation & Natural Resources Department

Enclosure – SWMP Year 2 Annual Report

Storm Water Management Program (SWMP) Annual Report Year 2

A. General information

1. Permit No. TXR040327
2. Annual Reporting Period: August 13, 2008 through August 12, 2009
3. Name of MS4 Permittee: Travis County
4. SWMP Contact/Phone: Dave Fowler, 512-854-7590
5. Mailing Address: Travis County TNR, P.O. Box 1748, Austin, Tx.,78749
6. Email: dave.fowler@co.travis.tx.us
7. The Travis County MS4 is currently relying on the following other government entities to satisfy some permit obligations:

    a. The City of Austin performs construction and post-construction review and inspection requirements (MCMs 4 and 5) in the Austin 5-mile Extra-Territorial Jurisdiction (ETJ) for subdivision construction under an existing jointly-adopted County Code Chapter 30 and One-Stop Shop Permit Center. Austin also performs these activities on non-subdivision construction sites in their ETJ as part of their TPDES Phase I storm water program. The City also performs limited IDDE spill response as well as inspection of permanent BMP ponds in their ETJ. An Interlocal Agreement between Travis County and City of Austin for comprehensive SWMP coordination is scheduled to be completed in Permit Year 3.

    b. The Lower Colorado River Authority (LCRA) performs joint construction and post-construction review and inspection requirements (MCM 4 and 5) with Travis County in the Highland Lakes Watershed Ordinance area in western Travis County under an existing 1990 Interlocal Agreement between the County and LCRA, which will be revised during Permit Year 3 with expanded County responsibilities.

    c. The TCEQ Edwards Aquifer Program performs construction and post-construction review and inspection requirements (MCM 4 and 5) on construction projects in the Barton Springs Edwards Aquifer Recharge Zone and Edwards Aquifer Northern Segment. This program also performs these requirements on construction sites 5 acres and greater in the Barton Springs Edwards Aquifer Contributing Zone.

8. A copy of this annual report has been submitted to the TCEQ Regional Office.

B. SWMP Modifications and Additional Information

1. Changes to the approved SWMP in Permit Year 2

    a. Changes to BMPs, measureable goals, dates, contacts, procedures or details are as follows, please refer to the Tables and separate NOC for additional information.

Changes to BMP measurable goals, dates, contacts, procedures, details in Years 2 and 3					
MCM/ Table	**BMP**	**Major Task**	**Measureable Goal**	**Due Date**	**Changes**
1	OSSF Outreach	OSSF Brochure	Complete Brochure	8.12.09	Revise due date to 8.12.10
1	Construction Outreach	Stakeholder Input	Solicit and receive comments	8.12.09	Revise due date to 8.12.10
1	Construction Outreach	Erosion Sediment Control Brochure	Complete Brochure	8.12.09	Revise due date to 8.12.10
1	SWMP Web Site	Web Site	Publish Web Site	8.12.09	Revise due date to 8.12.10
2	Inlet Markers	Provide Volunteer Opportunities	Inlet Markers installed	Annual	Revise Major Task description.
3A	OSSF Program	OSSF Maintenance Contracts-	Contracts inspected/ renewed	Annual	Revise Major Task and Measurable Goal description to more accurately describe activities.
4, 5	SWP3 &Post-Const. Regs	Revise Codes and Standards	Complete revisions	8.12.09	Revise due date to 8.12.11
4, 5	SWP3 &Post-Const. Regs	Revise LCRA Interlocal Agreement	Complete revisions	8.12.09	Revise due date to 8.12.10
4, 5	SWP3; Post-Const Review	Development Permit Checklist	Complete and implement Checklist	8.12.08	Revise implementation date to May 09 and revise schedule to review 100% of applications by Year 3 instead of Yr 2. Revise schedule to document 25% of Storm Water Notices by Yr 2, 50% by Yr 3, 75% Yr 4, 100%Yr 5
5	Post-Const BMP Maint. Regs	Revise Codes and Standards	Complete revisions	8.12.09	Revise due date to 8.12.11
5	Post-Const BMP Inspection and Maintenance	Conduct BMP Inspections and Maintenance	BMPs inspected/ maintained	Annual Years 2-5	Revised Major Task & Measureable Goals description to more accurately describe intent of BMP– monitoring of Non-County BMPs
6	EHS Program	EHS Plans for Service Centers	Semi-annual EHS Inspections	Annual	Revise semi-annual to annual inspection with additional follow-up inspections.

b. BMP additions or substitutions, with explanation.

No BMP additions or substitutions were proposed or made during Permit Year 2

c. A Notice of Change (NOC) will be submitted to TCEQ for these proposed changes as required.

2. The MS4 has not annexed any lands since obtaining permit coverage. 1,585.33 acres were removed from the MS4 through annexation into various municipal city limits during the Permit Year 2.

3. No receiving water body is newly listed as impaired and no EPA-approved TMDLs have been established during Permit Year 2.

4. The MS4 has not conducted any analytical monitoring of storm water quality.

C. Narrative Provisions

1. Compliance with Permit Conditions

a. Travis County is currently in compliance with the SWMP as submitted and approved by TCEQ, including the proposed changes submitted and described herein.

b. Travis County is currently in compliance with record keeping and reporting requirements for the SWMP. Each section performing BMPs maintains records and the SWMP core staff maintains a database of SWMP information.

c. Travis County meets the eligibility requirements of the permit for TMDL requirements, Edwards Aquifer limitations, compliance history, etc.

2. General assessment of the appropriateness of the selected BMPs:

The County believes all the BMPs selected in the SWMP are appropriate for achieving the statutory goal of reducing the discharge of pollutants to the Maximum Extent Practicable (MEP) over the Permit Term.

3. Progress towards reducing the discharge of pollutants to the maximum extent practicable (MEP). Summary of information used to evaluate reductions in the discharge of pollutants:

The County made satisfactory progress towards the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP) during the Permit Year. The County evaluates satisfactory progress towards this goal primarily by the successful performance of the BMPs and measurable goals listed in the SWMP. The County has completed most of the BMP measurable goals listed for Year 2, and has made significant progress towards finishing the measureable goals not completed per the original schedule.

4. General evaluation of the program's progress, including obstacles or challenges encountered in implementing BMPs, meeting the program's schedule, etc.

The County made acceptable progress implementing the SWMP during the Permit Year. Several important milestones were reached during the Permit Year, including:

- Receiving final TCEQ approval of the MS4 Permit and SWMP, on May 4, 2009.

- Receiving additional legal authority to implement the SWMP from the 2009 Texas Legislature. SB1299 was passed and signed into law by the governor on June 19th, including Travis County into Chapter 573 of the Local Government Code (Authority of Certain Counties and Districts to Regulate Storm Water Management), which makes the county's water quality authority more explicit, including the ability to assess fees and other specific authorities for implementation of the SWMP. Travis County is now the third county in Texas to receive this authority, in addition to Bexar and Harris Counties.

- Beginning the process to adopt fees to assist in the implementation of the SWMP.

Obstacles and challenges include:

- Revising Development Permit Codes and Standards to fully implement MCM 4 and 5 will require a more extensive public input process and more time.

- Implementation of interlocal agreements (ILAs) necessary for the SWMP requires mutual agreement and program coordination with other autonomous regional governmental authorities. The County made substantial progress in Year 2 by developing initial draft documents. The County will continue this process with the goal executing ILAs with the largest entities first (City of Austin and LCRA), and select smaller entities thereafter (small municipal ETJs and Special Districts such as MUDs and other Small MS4s).

- Hiring of new staff, and training of existing staff to consistently perform SWMP tasks in already established programs, is time consuming for the core SWMP staff and challenging for existing program limited resources. This will require revising some BMPs to longer completion schedules, but we anticipate all BMPs will be implemented in acceptable time frames within the overall Permit Term.

5. Non-Travis County operated construction activities that occurred within the Travis County MS4 during the Permit Year 2, via NOIs and CSNs provided by Construction Site Operators.

Travis County Development Permits issued for construction activities – Permit Year 2			
Type of Permit	**Total Permits**	**Total 1 acre or greater**	**NOI/CSN received**
Residential, miscellaneous	1, 069	123	25%
Residential, in a subdivision (part of common plan of development)	811	0	25%
Non-Residential, Site Development	173	62	50%
Non-Residential, Subdivision	7	7	100%
	2, 060	**192**	**25%+**

The Table above shows development permits issued in Permit Year 2. The County TNR Development Permit Center implemented a Permit Application Checklist system during Permit Year 2, which included documentation of storm water compliance for permits. We are only able to give an estimate of the total eligible development projects that provided us storm water notices for Construction General Permit TXR015000 this Permit Year, as our documentation system was not fully completed. We are confident at least 25% of eligible development permits in Permit Year 2 provided us storm water notice documentation. We are revising the associated BMP schedules in MCMs 4 and 5 for Years 2 through 5, to require an increasing percentage of the total development permits issued annually to document storm water notice compliance, reaching the goal of 100% by Permit Year 5. Please see the BMPs in Tables 4 and 5 on Pages 11 and 12, and the separate NOC issued for further information.

6. Travis County utilizes the 7th MCM for its' municipal construction activities. Please See MCM Table 7 on Page 14 for a comprehensive summary of County construction activities.

a. The number of municipal construction activities authorized under this general permit: 4

b. The total number of acres disturbed for these municipal construction projects: 78.9

7. Requirements for specific Minimum Control Measures (MCMs):

a. MCM 1 – Public Education and Outreach. Documentation of activities conducted and materials used to fulfill the requirements in Permit Year 2 are attached and the end of this Report and include: Grow Green Fact Sheet, Watershed Sign Location Plan, Watershed Sign format, Driveway Permit Brochure, TCTV Broadcast Plan.

b. MCM 1 – Public Education and Outreach. Documentation of the amount of BMP resources used to address each required group - residents, visitors, public service employees, businesses, commercial/industrial facilities, construction site personnel, are as follows:

BMP Resources	Groups addressed
Grow Green Program	residents, businesses, commercial facilities
OSSF Outreach	residents, businesses, commercial/industrial facilities
Science Education Outreach	residents - grade school age
Watershed Signs	all groups
Construction Outreach	residents, construction site personnel
TCTV	all groups
SWMP Web Site	all groups

c. MCM 3 – Illicit Discharge Detection and Elimination (IDDE). Travis County has not developed a list of allowable non-storm water discharges in addition to those already listed in the general permit and the approved SWMP.

8. Proposed changes to the SWMP in the coming reporting year.

The proposed changes to BMPs and measurable goals in Permit Year 3 as well as Year 2 are summarized in the above Table in Section B.1.a.

9. Describe any activities planned for the next permit year/reporting cycle.

The County will perform the storm water activities listed for Permit Year 3 in the approved SWMP Tables on Pages 7-14, including the changes described in Sections B.1. and C. 8. herein, which will also be submitted in a separate Notice of Change (NOC).

D. Storm Water Management Program Status – BMPs and Measurable Goals

The following Tables 1-7 on Pages 7-14 contain the Minimum Control Measures, Best Management Practices, Major Tasks, Measurable Goals, and Due Dates from the approved SWMP document. The Year 2 BMP Measurable Goal results and status have been added in bold and shaded in these Tables.

Proposed changes described above are included and summarized in these Tables.

BMPs and tasks performed during the Permit Year not scheduled in the approved SWMP are listed at the bottom of each MCM Table as Unscheduled Activities.

Table 1
MCM 1 - Public Education and Outreach BMPs Year 2 results shaded in bold

BMP	Major Tasks	Measurable Goals	Due Date	Responsible Party
Existing BMPs				
Grow Green Program	Continue educational program support of City of Austin Grow Green Program.	Total number of educational programs and publications distributed annually **Total educational program events - 4** **Total fact sheets distributed –148, 200**	Years 1-5	Texas AgriLife Extension Office in Travis County
OSSF Outreach	Perform training sessions for OSSF operators and respond to public inquiries for OSSF	Total number of training sessions conducted, inquiries responded to annually. **Training sessions- 0** **Inquiries response –480**	Years 1-5	TNR (Stacey Scheffel)
	Develop OSSF Brochure for distribution at TNR Permit Center	Complete Activity – **Not completed, change due date to end of Year 3 (NOC item)**	Year 3	
	Distribute OSSF Brochures	Brochures distributed annually	Years 3-5	
Science Education Outreach	Continue 4-H summer outreach efforts which include a water quality component for grade school age students in Del Valle, P'ville and Manor areas	number of education sessions and service hours performed annually **Education Sessions-125** **Service Hours-271, serving 101 youth**	Years 1-5	Texas AgriLife Extension Office in Travis County
New BMPs				
Watershed Signs	Develop a location plan for watershed signs and select 15 locations for sign placement	Complete Activity **Completed Year 1**	Years 1-2	TNR (David Kemp)
	Adopt standard watershed sign format.	Complete Activity **Completed**	Years 1-2	
	Produce signs in County Sign Shop, install, and maintain	Install 5 sign locations by Year 3, 10 by Year 4, 15 by Year 5	Year 3-5	
Construction Outreach	Receive input from stakeholder groups about types of materials, topics, of most benefit to them for consideration in selecting materials	Complete Activity **Not completed, change due date to end of Year 3 (NOC item)**	Year 3	TNR (Dave Fowler, Stacey Scheffel)
	Select materials, develop brochures for erosion and sediment control and driveway permits	Complete Activity **Driveway Brochure Completed** **ESC Brochure not completed - change due date to end of Year 3 (NOC item)**	Year 3	
	Provide brochures and staff guidance to development permit applicants in TNR Permit Center	Record totals annually - Permit counter inquiries responded to; brochures distributed with permits; brochures distributed from kiosk	Years 3-5	
Travis County TV (TCTV)	Review and select materials and develop a broadcast program plan and schedule.	Complete Activity **Completed**	Years 1-2	Media Services Program TNR (Amanda Celo)
	Broadcast TCTV Program Plan a minimum of 2 hours per month.	Record totals weekly, monthly, annually - hours and number of broadcasts, with general description of topics	Years 3-5	
SWMP Web Site	Develop an SWMP Web Site Plan including a list of topics and maintenance schedule.	Complete Activity **Completed**	Years 1-2	ITS TNR (Dave Fowler. Amanda Celo)
	Design and publish the website to the internet as part of the existing Travis County website	Complete Activity **Web Site not yet published - change due date to end of Year 3 (NOC item)**	Year 3	
	Maintain and update web site, including posting new information and topics in accordance with the maintenance schedule.	Record totals annually - number of web site sign ins and/or hits using log or hit counter.	Years 3-5	

Unscheduled Activities for MCM 2 performed during the Permit Year:

- 2 Master Gardener Intern Classes performed August 4 and 11th 2009, through the Texas AgriLife Extension Office
- 12 TDA Pesticide Use Training Sessions performed in Permit Year 2 by the Texas AgriLife Extension Office.

Table 2	MCM 2 – Public Involvement and Participation BMPs Year 2 results shaded in bold			
BMP	**Major Tasks**	**Measurable Goals**	**Due Date**	**Responsible Party**
		Existing BMPs		
Community Storm Water Initiatives	Continue participation in any ongoing efforts by the Regional Water Quality Protection Plan (RWQPP), LCRA Lake Travis Stakeholders, SW Growth Dialogue.	Record totals annually – meetings attended and activities participated in, milestones achieved **RWQPP – 4 meetings**	Years 1-5	TNR (Dave Fowler Tom Weber)
	Continue participation in the Onion Creek, Walnut Creek, and Highland Lakes Flood Damage Evaluation Projects (FDEPs), Colorado River Floodplain Coalition (CRFC), the TMDL Implementation Task Force for Gilleland Creek.	Record totals annually – meetings attended activities participated in, milestones achieved **Gilleland TMDL – 5 meetings; Draft TMDL Report approved by Stakeholders for TCEQ adopt**	Years 1-5	TNR (S Scheffel, Tom Weber)
		Onion Ck FDEP – 4 meetings, Study/Report complete; now in design **Walnut Ck FDEP – 0 meetings, Study complete** **Highland Lakes FDEP – 0 meetings** **CRFC – 3 meetings**	Years 1-5	TNR (Stacey Scheffel)
	Complete the Travis County Drainage Basin Study and give County residents in flood prone areas the opportunity for input.	Complete Final Report. Total public participation meetings/total public inquiries. **Final Report Completed March 2009** **Public Input Meetings -2 (Sept 24 and 25 2008)** **Commissioners Court Work Session- May 14, 2009** **Inquiries received at 2 Public Meetings only**	Years 1-2	TNR (Steve Schiewe)
Open Space Acquisition	Continue to provide opportunities for landowner participation in buyout of floodplain land by the county	Record total annually – floodplain acres purchased, costs **Floodplain Acres-171.9 Costs- $2,729,308**	Years 1-5	TNR (S Scheffel, M Mallia)
	Continue to provide opportunities for landowner participation in Balcones Canyonlands Preserve (BCP). Continue purchase of required acreage for BCP	Record total annually – acres purchased by private participants, costs; acres purchased for the BCP by the county, costs **BCP Acres- 324.72 /4 parcels Costs- $37,336,870**	Years 1-5	TNR (Rose Farmer)
	Continue to provide opportunities for parkland and open space acquisition by County via voter bonds or other means.	Record total annually – acres purchased, costs **Parkland Acres- 0 Costs- 0**	Years 1-5	TNR (Charles Bergh)
Household Hazardous Waste Collection	Continue financial participation to support the City of Austin Household Hazardous Waste Collection Program.	Record totals annually - County financial contribution and County residents participating **Contribution- $111,050.18** **Participants-1,972; Average 164/month**	Years 1-5	TNR (Charles Williams)
Adopt-a-Road and Volunteer Projects	Continue assistance to volunteer groups in county roadside cleanup, including signs, trash bags and trash pickup	Record total annually – clean up events, signs installed, bags/ amounts of trash disposed of **Participated in 2 volunteer clean-ups–** **1-Lake Travis Underwater Cleanup, 20 tns trash dispose** **2- Bullick Hollow Roadside Clean-up (4/4/09)**	Years 1-5	TNR (various)
Parks and BCP Participation Projects	Continue opportunities for volunteers to participate in Parks and BCP clean-up, restoration, tree planting, etc	Record total annually – events and type, quantities of trees planted, trash disposed of, etc. **Trees planted- 1,500 – Parks and BCP land** **American Youth Works (AYW) restoration work in BCP and Park land - 70.5 crew days/ 3,384hrs**	Years 1-5	TNR (Rose Farmer-BCP, Dan Chapman-Parks)
		New BMPs		
Public Notice for SWMP activities	Comply with all public notice legal requirements for SWMP implementation.	Record totals annually – CC Agenda items, newspaper or internet notices posted **Com. Court Agenda Items: SWMP – 1 ; SWMP related items -12** **SWMP Public Notice published in local newspaper on Jan 11 and 12, 2009 - no comments received**	Years 1-5	TNR (Dave Fowler)
Codes and Standards Development	Provide opportunity for County stakeholders to participate in Code and technical standards revisions for SWMP	Record and document number of meetings and comments received, annually. **2 Public Meetings on Floodplain Code Ch 64 Revisions-** **3-4 speakers, 2 written comments received**	Years 1-5	TNR (Dev Services, Dave Fowler)
Storm Drain Inlet Marking	Provide opportunity for volunteer groups to initiate participation projects to install storm drain inlet marker, with County assistance as resources allow.	Record totals annually – projects and inlet markers installed. **Markers Installed –0** **Revise Major Task description (NOC Item)**	Years 1-5	TNR (David Kemp)

Unscheduled Activities for MCM 2 performed during the Permit Year:

- One Texas Floodplain Management Association (TFMA) Conference attended

Table 3A
MCM 3 – Illicit Discharge Detection and Elimination (IDDE) BMPs - Existing BMPs
Year 2 results shaded in bold

BMP	Major Tasks	Measurable Goals	Due Date	Responsible Party
On-Site Sewage Facility (OSSF) Permit Program	Review, permit, and inspect new and upgraded OSSF systems in the county MS4.	Record totals annually – Permit applications reviewed, permitted, inspected, issued final approval. **OSSF Permits reviewed/given final approval- 286** **OSSF Permit total inspections - 853**	Years 1-5	TNR (Stacey Scheffel)
	Monitor aerobic and commercial OSSF systems requiring maintenance contracts and reports provided to the County	Record totals annually – **Total OSSF maintenance contracts monitored– 3235, including 76 commercial systems** **Revised Task and M Goal language (NOC item)**	Years 2-5	
	Receive, investigate, and resolve complaints of improper operation and maintenance of OSSF systems, maintenance contracts, or sewage discharge.	Record totals annually – complaints investigated, resolved, or referred to enforcement **Sites Investigated-116, (107 from complaints)** **NOVs issued 62** **Resolved –105** **Referred to enforcement – 11**	Years 1-5	
Travis County Dumping Committee (TCDC)	Continue to participate in monthly TCDC meetings, activities, and provide meeting facilities for the Committee.	Record totals annually - meetings held and participated in. **Meetings held/participated- 10**	Years 1-5	TNR (Melinda Mallia) County Attorney
Regional Environmental Task Force (RETF)	Continue participation in RETF quarterly meetings and training efforts.	Record totals annually - meetings and training sessions participated in. **Meetings – 4 Training sessions held- 4**	Years 1-5	County Attorney TNR
Roadside Litter Abatement	Continue existing program to remove litter from county roadsides and properly dispose at landfills.	Record totals annually – miles of roadsides cleaned; work orders; cubic yards waste disposed **Roadside Miles- 2,082.67** **Work Orders- 957** **CY Waste- 12,408.98 (2,792,020 lbs)**	Years 1-5	TNR (Road Maintenance)
Auto Salvage Yard Ordinance Program	Review Code Ch 49 standards and revise to meet IDDE requirements as necessary.	Complete activity. **Review completed. Code determined adequate to implement IDDE Program.**	Years1-2	ATCHHSD TNR
	Continue program to inspect and respond to complaints for auto salvage yards, junkyards, and metal recyclers	Record totals annually - inspections/ compliant within 30 days/ referred for enforcement **Inspections- 2 (complaint response)** **Compliant/Referred- 1**	Years 1-5	ATCHHSD (Gwen Meighan)
Spill Response	Review, revise existing procedures and agreements for spill response as necessary	Complete Activity. **Review and minor revisions completed**	Years1-2	TNR (Charles Williams)
	Continue to respond to haz-mat spills and dumping per adopted procedures and agreements	Record totals annually - spills or dumping responded to/remediated; in right-of-way (ROW) or private lands; referred for enforcement **ROW Haz-Mat Illegal Dumping Responses- 6** **$4,473.38 contracted clean-up costs**	Years 1-5	Emergency Services County Attorney
Nuisance Abatement Program	Continue program to inspect and respond to complaints for rubbish, litter, and junked vehicles in the County MS4 under County Code Chapter 61.	Record totals annually - inspections/ compliant within 30 days/ referred for enforcement **Total Inspections-776** **Compliant-636 Referred-23** **(Remaining are pending/being monitored)**	Years 1-5	ATCHHSD (Gwen Meighan)

Unscheduled Activities for MCM 3 during the Permit Year:

Table 3B	MCM 3 – Illicit Discharge Detection and Elimination (IDDE) BMPs - New BMPs Year 2 results shaded in bold			
BMP	**Major Tasks**	**Measurable Goals**	**Due Date**	**Responsible Party**
IDDE Program	Adopt regulations and/or regulatory mechanisms for IDDE program; Revise Code Enforcement Policy and Procedures as necessary for IDDE efforts	Complete Activity **Completed adopting regulatory mechanisms and revising enforcement policy and procedures for IDDE program**	Year 1-2	TNR (Jonas Rosenthal) County Attorney
	Develop and implement an IDDE response plan identifying the primary first response jurisdiction and contacts for MS4 areas	Complete Activity **Completed IDDE response plan by revising existing protocols**	Year 1-2	TNR (Jonas Rosenthal)
	Review/revise existing county IDDE contact points as necessary and designate lead staff for IDDE complaint response	Complete Activity **Completed revising IDDE contacts points and response protocols between TNR Environmental Investigator, County Attorney and TCSO Environmental Crimes Units, ATCHHSD, and TNR OSSF.**	Year 1-2	TNR (Jonas Rosenthal) Travis County Sheriff's Office (TCSO) County Attorney
	Investigate/inspect and resolve illicit discharge complaints	Record totals annually -Complaints received, investigated, referred to others, resolved, enforced	Years 2-5	All
		Illegal Dumping Enforcement Sites Investigated/cleaned up/prosecuted – 240/200/43 Fines – $25,000; Waste removed 28,000 lbs	Years 2-5	TCSO Env. Crimes Unit (Detective Sydney Parker)
		Illegal Dumping Enforcement Total Sites Investigated/cleaned up– 405/166 Fines – $14,346; Waste removed -4,083,520 lb	Years 2-5	County Attorney Env. Crimes Unit (Dennis Rudder, Doug MacDougall)
		Non-criminal IDDE response Complaints received/investigate33/33 Referred-24 Resolved- 29 Enforced- 1	Years 2-5	TNR (Jonas Rosenthal)
Industrial Site Monitoring and Outreach	Develop and maintain an inventory of industrial sites and perform outreach to educate and ensure compliance.	Complete inventory **Completed basic inventory of permitted TCEQ Industrial Sites. Selected Outreach Materials and began distribution.**	Years 1-2	TNR (Jonas Rosenthal)
		Maintain inventory and perform outreach on 30% of sites by Year 3, 60% by year 4, 100% by Year 5.	Years 3-5	
	Review new and redeveloping Industrial Sites through TNR Development Permit Center to ensure compliance with applicable industrial storm water regulations.	Record totals annually - new or redeveloping industrial sites reviewed and issued county development permits. **New Industrial Sites reviewed/permitted through TNR Dev Permit process – 8/4**	Years 2-5	TNR (Dave Fowler, Jonas Rosenthal, Tom Weber)
	Develop/ implement system to respond to industrial site complaints, including direct response or referral to TCEQ or other.	Record totals annually - complaints received, investigated, referred, resolved **Industrial Site Complaints received/ investigated - 12/12 Referred-5 Resolved- 9 Enforced- 0**	Years 2-5	TNR (Jonas Rosenthal)
MS4 Map	Develop base MS4 GIS map.	Complete activity. **Completed Year 1.**	Year 1	TNR (Amanda Celo, David Kemp, Robert Dial)
	Develop and implement system to maintain and update MS4 Map for municipal annexations, development permits, county construction activities, etc.	Complete activity. Update and maintain map. Record total acres removed from county MS4 through annexation annually. **Completed Year 1.**	Years 1-2	
	Perform Outfall Reconnaissance Inventory (ORI) inspections to document structures, BMPs, and outfalls and complete MS4 Map.	Record totals annually - structures and outfalls added to MS4 Map. Complete 25% by Year 2, 50% Year 3, 75% Year 4, 100% Year 5. **Total Structures added/verified -2,236 Outfalls added (included in above total) – 132 Total MS4 drainage structures - 7,788*, % MS4 structures estimated mapped- 25-50%**	Years 1-5	

*7,788 Total structures in MS4 Geodatabase by end Year 2. Includes structures by type: Bridges- 156, Closed Pipes- 302, Culverts- 3054, Inlets- 3568, Outfalls- 277, Outlets- 55, Channels- 194, Ponds- 149, Manholes- 33

Unscheduled Activities for MCM 3 during the Permit Year:

- Miscellaneous Illicit Discharges investigated /total inspections by SWMP staff – 25/34 (incl. ORI discoveries)
- Miscellaneous Industrial Site investigations/total inspections by SWMP staff – 4/18

Table 4
MCM 4 – Construction Site Storm Water Runoff Control BMPs Year 2 results shaded in bold

BMP	Major Tasks	Measurable Goals	Due Date	Responsible Party
Existing BMPs				
Development Complaint Hotline	Review existing points of contact, procedures, response criteria, public advertising and revise as necessary	Complete activity. **Completed Year 1.**	Year 1	TNR Dev. Services NREQ SWMP
	Continue operation of phone hotline (for construction-related storm water complaints on County development permits).	Record number of inquiries received/responded to/referred to enforcement **Inquiries-214** **Resolved/referred-214/126**	Years 1-5	
New BMPs				
SWP3 Regulations	Finalizing interim water quality rules for Non-ETJs areas, including adoption of SWP3 regulations for subdivision and non-subdivision construction.	Complete activity **County Codes and Standards update not complete, change due date to 8.12.11 for full completion (NOC Item)**	Years 1-2	TNR Dev. Services NREQ SWMP
	Revise 1990 Interlocal Agreement with LCRA for Non-ETJ areas subject to the Highland Lakes Watershed Ordinance, including SWP3 requirements for subdivision and non-subdivision construction.	Complete activity **Interlocal Agreement revision not complete, change due date to 8.12.10 (NOC Item)**	Year 1-3	
	Implement Interlocal Agreements or other mechanisms with SWP3 requirements for subdivision and non-subdivision construction, for municipal ETJs with largest populations.	Complete activity **Interlocal Agreement on schedule with the City of Austin.**	Years 1-3	
	Implement Interlocal Agreements or other mechanisms with SWP3 requirements for subdivision and non-subdivision construction, for municipal ETJs with smallest populations.	Complete activity	Years 3-5	
Permit Application and Plan Review	Develop and implement a Development Permit Checklist review system for 100% of permit applications which includes SWP3 regulations requirements.	Complete and implement Checklist. Record total permit applications reviewed annually. **Checklist implemented May 2009** **Total Applications/Total reviewed w/Checklist** • **Non-Residential -1880/1461 (77%)** • **Residential-180/115 (64%)** **Revise original schedule to review 100% by Year 3. Revise schedule to document 25% of Storm Water Notices by Year 2, 50% by Yr 3, 75% Yr4, 100%Yr 5.(NOC Item).**	Years 1-5	TNR Dev. Services NREQ SWMP
	Develop and implement a plan review system for SWP3 requirements for all projects. Review all projects 5 ac or grter by Year 3; all 3 ac or greater by Year 4; all non-single family residential projects (SFR) and SFR over 1 ac by Year 5.	Record number of projects reviewed, permitted annually.	Years 3-5	
	Continue Single Office review for subdivisions in Austin ETJ and other municipal ETJs with Interlocal Agreements, which includes SWP3 review by the county or municipality.	Record number of projects reviewed, permitted annually per jurisdiction. **Austin ETJ Subdivision Projects Reviewed/ Permitted- 5 (construction review by Austin)**	Years 1-5	
Inspection and Enforcement	Develop and implement an inspection and enforcement system for SWP3 requirements, including technical standards, procedures, response protocols; training for inspectors.	Complete Activity **Completed SWMP Inspection Standards Document for Development Permits.**	Years 1-2	TNR Dev. Services
	Inspect all construction projects 5 ac or greater for SWP3 requirements by Year 3; all 3 ac or greater by Year 4; all Non-SFR projects and SFR over 1 ac by Year 5.	Total inspections and sites inspected annually/% compliant/no. enforced	Years 3-5	NREQ SWMP

Unscheduled Activities for MCM 4 during the Permit Year:

- 39 subdivision, site development, and miscellaneous development permit applications were reviewed for storm water compliance and/or SWP3 controls by NREQ SWMP staff.
- 118 subdivision, site development, and residential development permit projects were inspected for SWP3 and storm water compliance, with 233 total inspections, by NREQ SWMP staff.

Table 5
MCM 5 – Post-Construction Storm Water Management BMPs Year 2 results shaded in bold

BMP	Major Tasks	Measurable Goals	Due Date	Responsible Party
New BMPs				
Post-Construction Storm Water Management Regulations and Technical Standards	Finalize interim water quality rules for Non-ETJ areas, including adoption of post-construction storm water regulations for subdivision and non-subdivision construction.	Complete activity **County Codes and Standards update not complete, change due date to 8.12.11 for full completion (NOC Item)**	Year 1-4	TNR Dev. Services NREQ SWMP
	Revise 1990 Interlocal Agreement with LCRA for Non-ETJ areas subject to the Highland Lakes Watershed Ordinance, including post-construction storm water regulations for subdivision and non-subdivision construction.	Complete activity **Interlocal Agreement revision not complete, change due date to 8.12.10 (NOC Item)**	Years 1-3	
	Implement Interlocal Agreements or other mechanisms which include post-construction storm water regulations for subdivisions and non-subdivision construction in municipal ETJs with largest populations.	Complete activity **Interlocal Agreement on schedule with the City of Austin.**	Years 1-3	
	Implement Interlocal Agreements or other mechanisms with post-construction storm water regulations for subdivisions and non-subdivision construction in municipal ETJs with smallest populations.	Complete activity	Years 3-5	
Permit Application and Plan Review	Develop and implement a Permit Checklist review system for 100% of permit applications which includes identification of post-construction storm water regulation requirements.	Complete/implement Checklist. Record total permit applications reviewed annually. **Checklist implemented May 2009** **Total Applications/total reviewed w/Checklist** • **Non-Residential -1880/1461 (77%)** • **Residential-180/115 (64%)** **Revise original schedule to review 100% by Year 3. (NOC Item)**	Years 1-5	TNR Dev. Services NREQ SWMP
	Develop and implement a plan review system for all projects requiring post-construction storm water BMPs. Review all projects 5 ac or greater by Year 3; all 3 ac or greater by Year 4; all non-single family residential projects (SFR) by Year 5.	Record number of project plans reviewed, permitted annually.	Years 3-5	
	Continue Single Office review for subdivisions in Austin ETJ and other municipal ETJs with Interlocal Agreements, which includes post-construction storm water regulations review by the county or municipality.	Record number of projects reviewed, permitted annually per jurisdiction. **Austin ETJ Subdivision Projects Reviewed/ Permitted- 5** **(post-construction review by Austin)**	Years 1-5	
Post-Construction BMP Inspection and Maintenance	Develop and adopt regulations and other regulatory mechanisms to ensure operation and maintenance of post-construction BMPs in the county MS4. Adopt criteria for BMP maintenance.	Complete Activity **County Codes and Standards update not complete, change due date to 8.12.11 for full completion (NOC Item)**	Years 1-4	TNR Dev. Services NREQ SWMP
	Adopt inspection procedures or agreements to ensure BMPs are constructed per plans Inspect all projects 5 ac or greater by Year 3; all 3 ac or greater by Year 4; all Non-SFR projects Year 5.	Total sites inspected annually/ total compliant at final inspection/ total referred to other jurisdiction	Years 3-5	
	Develop and maintain inventory of new BMPs through the ORI process in BMP 3.3.3 MS4 Map.	See BMP 3.3.3 MS4 Map and Table 3B. **On schedule with MS4 Map/ORI**	Years 2-5	
	Monitor completed BMPs in the MS4. Inspect and conduct follow-up and enforcement with responsible parties as necessary.	Total BMPs inspected/ maintained annually **9 inspections performed** **Revised Major Task and Measureable Goals description to more accurately describe intent of BMP (NOC Item)**	Years 2-5	

Unscheduled Activities for MCM 5 during the Permit Year:

- Unscheduled review and ispection work figures for MCM 4 above includes numerous post-construction items.
- NREQ SWMP staff performed numerous reviews and comments on proposed Title 30 Austin ETJ/Travis County Subdivision Code revisions for Erosion/Sediment Control criteria, development on closed landfills, BMP pond maintenance.

Table 6
MCM 6 – Pollution Prevention and Good Housekeeping for County Operations BMPs
Year 2 results shaded in bold

BMP	Major Tasks	Measurable Goals	Due Date	Responsible Party
Existing BMPs				
Closed County Landfills	Continue to monitor identified closed County landfills in the MS4 as necessary to maintain compliance with applicable waste and discharge regulations.	Prepare Annual Closed Landfill Status Report for County Auditor. **Completed.**	Years 1-5	TNR (Keith Coburn)
	Continue to maintain Hwy 290 East Closed Landfill leachate collection and disposal system via contract.	Total gallons of leachate disposed of annually to the Austin waste water system. **2,320,688 gallons**	Years 1-5	
Pesticide Applicator Licensing	Continue Non-Commercial Certified Applicator Licensing and CEUs for employees using pesticides and herbicides	Record number annually – road and parks employees certified, re-certified, and taking CEUs **Employees Certified/ReCert/CEUs- 22**	Years 1-5	TNR (Charles Williams)
Environmental Health and Safety (EHS) Program for TNR Facilities	Continue EHS Plans for primary MS4 maintenance facilities, including existing and new required storm water pollution prevention BMPs for this section	Record annual inspections, follow-up inspections, and compliance status with BMPs. **4501 RM 620 North (West Service Center) 1 inspection; 38/55 Items = 69% compliance** **6011 Blue Bluff Rd (East Service Center) 1 inspection; 34/57 Items = 60% compliance** **Change to annual inspection with follow-up inspections till compliance achieved (NOC Item).**	Years 1-5	TNR (Keith Coburn, Chas Williams, Amanda Celo, David Kemp, Robert Dial)
New BMPs				
Good Housekeeping BMPs	Review and revise storm water pollution prevention BMPs for all areas in the existing EHS Plans as necessary.	Complete Activity **Completed.**	Years 1-2	TNR (Dave Fowler)
	Implement revised BMPs as part of the EHS Plans	Refer to EHS Plans, above	Yrs 2-5	
Employee Training Program	Develop training program including storm water awareness, and procedures and standards for BMPs for the EHS Plans and the MS4 maintenance operations.	Complete Activity **Completed.**	Years 1-2	TNR (Dave Fowler)
	Implement annual employee training.	Total employees trained annually, including 100% of employees in applicable operations.	Years 3-5	
Structural Control Maintenance	Review and revise existing EHS Plans for structural control maintenance as necessary	Complete Activity **Completed.**	Years 1-2	TNR (Robert Dial, David Kemp, Road, Park Maint.)
	Conduct structural control maintenance per EHS Plan procedures and schedules	Total County-owned storm water structural controls maintained annually **MS4 Maintenance (EHS) Facilities -7 County Roads, Parks - 5**	Years 2-5	
Waste Management and Disposal	Review and revise existing EHS Plans and County Waste Management Code Chapter 111 as necessary for waste management and disposal BMPs.	Complete Activity. **Completed.**	Years 1-2	TNR (Charles Williams)
	Implement revised waste management and disposal BMPs as part of the EHS Plans.	Quantities recycled/disposed of annually: **Recycled: Waste oil –4109 gal Tires – 631 Antifreeze –860 gal Disposed Dumpster solid waste– est. 700CY(East and West service centers)**	Years 2-5	(Facilities Management for solid waste)
Erosion and Sediment Control (ESC) Program for Maintenance Construction	Adopt criteria for use of temporary and permanent ESC BMPs on county maintenance construction activities.	Complete Activity **Completed.**	Years 1-2	TNR (Dave Fowler, Robert Dial, David Kemp, Road Maintenance)
	Perform ESC BMPs on applicable maintenance construction projects and work orders per criteria	Perform BMPs on 40% of applicable work orders by Year 3, 60% by Year 4, 100% by Year 5	Years 3-5	

Unscheduled Activities for MCM 6 during the Permit Year:

- SWMP staff completed inventory of County-owned structural controls/ponds, performed 19 pond inspections
- SWMP staff assisted with storm water BMP compliance/oversight on 24 Road Maintenance small construction projects, 117 total inspections (erosion control, fill and waste management, vegetation management)
- SWMP staff assisted with 4 Parks/BCP erosion control/restoration projects, 33 total inspections

Table 7 MCM 7 – Authorization for County Construction Activities BMPs Year 2 results shaded in bold				
BMP	**Major Tasks**	**Measurable Goals**	**Due Date**	**Responsible Party**
New BMPs				
Storm Water Pollution Prevention Plan (SWP3) BMPs	Develop SWP3 compliance system to be followed on all County Construction Activities, including technical standards, plan review, and inspection/enforcement	Complete SWP3 Standards Document and implement system **Completed Year 1.**	Year 1	TNR (Dave Fowler, CIP)
	Review 100% of proposed County construction project plans for compliance with SWP3 Standards	Record number of project plan reviews per year **Plan reviews for SWP3 – 13** **CSNs issued under MS4 Permit TXR040327 to County projects starting construction within this Permit Year - 4**	Years 1-5	TNR (Dave Fowler, Robert Dial, David Kemp)
	Inspect 100% of County projects under construction for compliance with SWP3 Standards	Record number of SWP3 inspections and compliance status per project/per year. **Total projects under construction-15** **SWP3 Inspection Reports made- 273** **SWP3 Inspection Report compliance rate - 83%** **SWP3 audits/additional inspections (SWMP staff) -345**	Years 2-5	TNR (CIP inspection staff) (Robert Dial, David Kemp)
Post-Construction BMPs	Review 100% of construction plans and permit applications for county projects implementing post-construction BMPs	Record number of plan and/or permit application reviews on applicable projects per year. **Plan reviews for post-construction storm water–13**	Years 1-5	TNR (Dave Fowler, CIP project managers)
	Ensure 100% of county projects implementing post-construction BMPs are constructed per plans.	Record number of final inspections for post-construction BMPs on applicable projects per year. **Total projects w/permanent BMPs completing final inspections - 3**	Years 2-5	TNR (CIP inspection staff) (Robert Dial, David Kemp)
	Ensure newly constructed BMPs and drainage structures on County projects are documented through the ORI process described in BMP 3.3.3 MS4 Map.	See BMP 3.3.3 MS4 Map and Table 3B in MCM 3. **All accepted County BMPs and drainage structures added to MS4 Geodatabase and BMP list per MCM 3**	Years 2-5	TNR (Amanda Celo, Robert Dial, David Kemp)

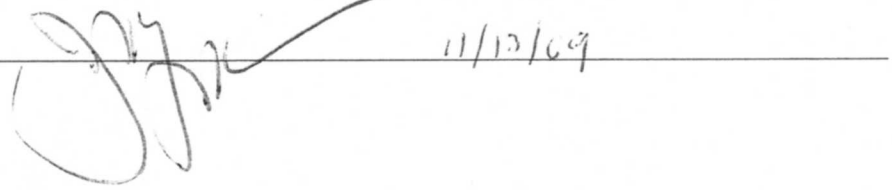
Unscheduled Activities for MCM 7 during the Permit Year:

- 4 additional project storm water/environmental reviews performed for preliminary compliance (before construction plans) or for Travis County-funded projects where the County will not be the Primary Construction Site Operator/sign the NOI/CSN.

E. Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on the inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Joseph P. Gieselman Title: Executive Manager, TNR

Signature/Date:  11/13/09

Attachments - Public Education Materials (following this Sheet)

- **Grow Green Fact Sheet**
- **Watershed Sign Location Plan (2 pages)**
- **Watershed Sign Format**
- **Driveway Permit Brochure (2 pages)**
- **TCTV Broadcast Plan**

grow green

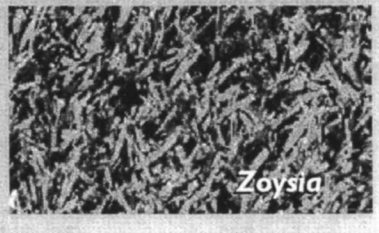
earth-wise guide to

Lawn Care

a dense, healthy lawn with deep roots improves the lawn's ability to absorb water, reduce runoff and out-compete weeds

in this fact sheet:

- Starting a New Lawn
- Grass Options
- Mowing
- Irrigation
- Aerating
- Fertilizing
- Weeding



Grow Green encourages the use of native and adapted, drought-resistant plants and grasses. These plants conserve water and protect water quality by requiring fewer pesticides and fertilizers.

Starting a New Lawn

- Minimize your total lawn area. Consider lawn alternatives such as beds and mulched areas to reduce water and fertilizer needs
- Start with a minimum of six inches of high quality soil to grow a healthy lawn
- Prepare the soil by removing perennial weeds and tilling in at least 2" of compost
- Level your lawn area to avoid low spots where water will pool or consider creating a rain garden with moisture-loving plants for a large low area (www.growgreen.org/downloads/landscaping.pdf)
- Choose between seed, plugs, or sod, then keep soil moist until the lawn becomes established
- Avoid over-watering a newly seeded lawn to prevent grass seed from washing away

Caring for an Established Lawn

Mow Properly

- Mow grass frequently enough so that no more than 1/3 of the leaf blade is removed at one time
- Mow when the grass is dry to prevent spread of turf diseases
- Cut the grass at the recommended height to help establish a deeper root system (refer to chart below)
- Sharpen mower blades regularly; sharp blades do less damage to grass
- **Do not bag your grass clippings** unless disease is present
- Use a mulching mower if possible
- Do not blow clippings into a storm drain

Grass Options*

Grass	Drought Tolerance	Mowing Height	Sun	Start-up Requirements
Buffalo	Very High	(Mowing optional) 2- 3"	6 hours/day minimum	Sod, plugs, seed
Common Bermuda	High	1.5 - 2"	Full sun	Seed or sod
Zoysia	High	1.5 - 2"	Full sun to partial shade	Sod or plugs
St. Augustine	Low (Medium in shade)	2 .5" (sun), 3 - 3.5" (shade)	Best for shady spots (requires the most water in sun)	Sod or plugs

* see the Grow Green Plant Guide for more options

Mandatory Watering Schedule (May 1- September 30)

- Don't water more than two times per week
  - *Odd house numbers:* Wednesdays & Saturdays
  - *Even house numbers:* Thursdays & Sundays
- Water after 7 pm and before 10 am
- Hand-water anytime

www.waterwiseaustin.org or call 974-2199 for information on water audits, finding a City-certified licensed irrigator, and other water conservation tips

Irrigate Efficiently

- Water before the sun comes up to help prevent fungal diseases and evaporation
- Water deeply and infrequently to encourage deeper roots and prevent thatch
- Water so that the soil is wet to a depth of 4-6 inches. To achieve this, you will need to apply 1/2 to 1 inch of water which can be measured in a small can or rain gauge
- Because water is more likely to run off clay soils and sloping lots, it may be necessary to irrigate slowly or in multiple short cycles to prevent water run-off
- Allow soil to dry out between waterings
- Watering is seldom necessary during the dormant season (December-February)

Aerating

- Aerate your lawn at least once a year to improve drainage and bring more oxygen to the soil
- Moisten your soil the day before aerating to make the job easier and more effective
- Use a hollow-tined aerator that removes the plugs to increase water and oxygen to the soil
- After aerating, apply $^{1}/_{8}$" of compost to increase microbial activity (Call 972-1954 for information on Dillo Dirt, an organic compost produced by the City of Austin's Water Utility.)

Fertilizing

Right Knowledge

- Test your soil every 2-3 years and base your fertilizer application on the results (without a soil test, use rates for low to medium foot traffic on the following page)

Right Products

- Use organic fertilizers which are naturally slow release - they provide a good quality turf and soil
- If choosing a synthetic fertilizer,
  - make sure there is a high percentage of slow release chemical in the product

avoid weed and feed products!

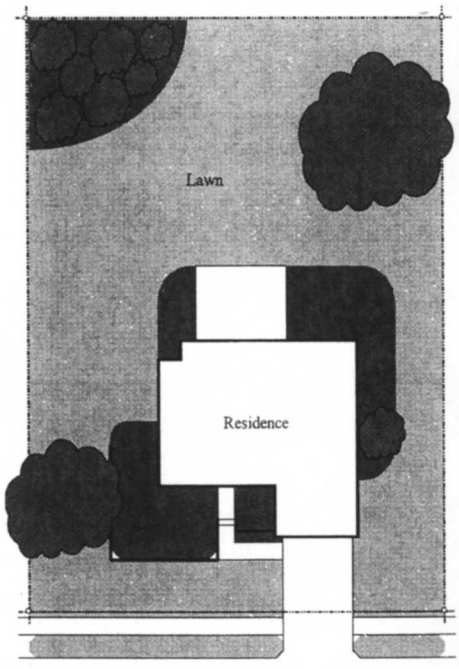
1. The best time to use a fertilizer is not usually the best time to use an herbicide
2. Spreading herbicides over the entire yard is usually overkill - hand-pull or spot treat weeds instead

Overseeding with rye grass is not necessary. It requires more fertilizer, mowing and irrigation and can delay the growth of the permanent turf, often leaving it thin and weak.

  - if using standard synthetic, follow the "Right Rate" recommendations (right) carefully
- Buy a fertilizer with low phosphorous (the middle number in the fertilizer ratio. 4-1-2)
- Improve both soil texture and nutrient levels by applying $^{1}/_{4}$" compost to the top of your lawn **instead** of fertilizer

Right Rate

- Measure your lawn size, not your property size (over-application is one of the greatest threats to water quality)
- Leave grass clippings on the lawn to return 60% of the needed nitrogen and 100% of the phosphorous and potassium to the soil naturally
- If not bagging the clippings, use half as much, half as often as recommended on the bag ($^{1}/_{2}$ lb.N/1000 square feet, no more than twice a year)
- Use a fertilizer spreader with a deflector guard to avoid getting fertilizer on hard surfaces
- Save any leftover fertilizer for the next season; store in a cool dry place



When calculating how much fertilizer to apply, measure only the lawn areas – subtract house, driveway, walkways, and beds from the total area of your property.

Right Timing

- Spring Fertilization: April 15 (after the lawn has been mowed two times)
- Fall Fertilization: Early October (may only be necessary if lawn looks unhealthy)
- **Never fertilize before a rain!**

Right Method

- Water in gently to avoid runoff
- Sweep any fertilizer off sidewalks and roads back onto the lawn

Weed Appropriately

- As you develop a dense, healthy turf, weed problems will diminish
- Fill in bare spots in your lawn with grass plugs or seed
- Monitor and remove weeds regularly before they get established or bloom and release their seeds
- Avoid using herbicides. An effective and least toxic way to remove weeds is to pull them by hand
- If you decide to treat chemically, refer to the Grow Green Weed fact sheet (www.ci.austin.tx.us/growgreen/downloads/weeds.pdf)

When should I fertilize and how often?

Turf Use:	Application Rate:	Application time:
Low to Medium foot traffic	1/2 pound of nitrogen per 1000 square feet of lawn area applied ONCE per year	± April 15 (after grass has been mowed two times)
Moderate to High foot traffic	1/2 pound of nitrogen per 1000 square feet of lawn area applied TWICE per year	± April 15 by October 15th

How much fertilizer should I apply?

Soil in Austin is normally high in phosphorus and potassium; therefore fertilizing amounts should be based on the nitrogen content of the fertilizer. In general apply ½ pound of nitrogen/1000 square feet. Refer to chart for amounts or visit http://aggie-turf.tamu.edu/aggieturf2/calculators/fertsheet.html:

Fertilizer Analysis: *Comparison of Nitrogen (N) to Phosphorus (P) to Potassium (K)*	Amount of Fertilizer	
	Lbs.	Cups
4-2-3	12.5	25
6-1-1 6-2-4	8	16
8-2-4	6	12
9-1-1	5.5	11
11-2-2	3	6
26-2-13	2	4
32-0-10	1.6	3

To convert lbs. to cups multiply the number of lbs. x 2
Based on estimation that 1/2 lb. of dry fertilizer = 1 cup

product toxicity comparisons

Evaluation of active ingredients only; does not include toxicity information on inert or "other" ingredients.

A dense, healthy lawn is the best defense against weeds

Toxicity/Threat:
○ *low* ◔ *low to moderate* ◑ *high* ● *highest* **NA** *not applicable*
? *unknown toxicity* ☠ *banned by EPA* *earth-wise*

note	Product Name	active ingredient(s) / concentrations	Hazards: human toxicity acute	human toxicity chronic	aquatic life	birds, bees, pets	soil mobility	environmental persistence
	Weed and Feed Products							
●	Concern® Weed Prevention Plus™ 8-2-4	*Corn gluten*	○	○	◔	○	?	?
	Fertilome® Weed & Feed Special 20-0-4	*Simazine .63%*	○	◔	○	○	○	◔
	Scotts® Turf Builder® Halts® Crabgrass Preventer 30-3-4	*Pendimethalin 1.71%*	◔	○	◑	◔	○	◑
	Vigoro® Ultra Weed & Feed 28-3-3	*2,4-D 0.64%, MCPP 0.16%, Dicamba 0.03%*	◔	◑	◔	○	●	◔
	Scotts® Turf Builder® WinterGuard™ PLUS 2® Weed Control	*2,4-D 1.04% MCPP 0.52%*	◔	◑	◑	○	●	◔
	Vigoro® UltraTurf™ St. Augustine Weed & Feed with Atrazine 29-3-5	*Atrazine 1.102%, Related compounds 0.058%*	◔	◑	◑	○	●	◑
	Lesco Atrazine 0.92% Plus 17-4-6	*Atrazine .92%*	◔	◑	◑	○	●	◑
	Scotts® Bonus® S Max Southern Weed and Feed & Fire Ant Killer 26-2-9	*Atrazine 1.089% Bifenthrin 0.110%,*	◔	◑	●	◑	●	◑

most toxic

product toxicity comparisons

Evaluation of active ingredients only; does not include toxicity information on inert or "other" ingredients.

Toxicity/Threat:

○ *low* ◐ *low to moderate* ◑ *high* ● *highest* **NA** *not applicable*

? unknown toxicity ☠ *banned by EPA* *earth-wise*

Hazards:

note	Product Name	active ingredient(s) / concentrations	human toxicity acute	human toxicity chronic	aquatic life	birds, bees, pets	soil mobility	environmental persistence
	Pre-emergent Products							
	Green Light® Portrait® Granules	*Isoboxen .38%*	◐	◑	◐	○	◑	◐
	Hi Yield® Crabgrass Control	*Benefin 1.33%, Trifluralin .67%*	◐	◐	◑	◐	◑	◐
	Post-emergent Products							
	Agralawn Crabgrass Control	*Cinnamon bark .95%*	○	?	○	○	○	?
	Spectracide® Weed Stop® 2x Weed Killer for Lawns Gel	*Diquat dibromide 0.18% Fluazifop-p-buytl .06% Dicamba.04%*	◐	?	◐	○	◐	○
	SedgeHammer® (formerly called Manage)	*Halosulfuron - methyl 75%*	◐	◐	◐	○	◑	?
	Ortho® Weed-B-Gon Weed Chickweed, Clover & Oxalis	*Triclopyr, triethylamine salt 8%*	◐	◐	◑	◐	◐	○
	Hi-Yield® Grass Killer (Poast®)	*Sethoxydim 18%*	◑	?	◑	○	◐	○
	Image® Kills Nutsedge	*Imazaquin 3.3%*	◐	?	◐	○	●	◑
	Fertilome® Crabgrass, Nutgrass & Dallisgrass Killer	*Monosodium acid methanearsonate 13.2%*	◐	●	◐	○	○	◑
	Ortho® Weed-B-Gon Max® Plus Crabgrass Control Ready-to-Use	*2,4-D 0.12%, MCPP 0.22%, Dicamba quniclorac 0.10%*	◐	◑	◐	○	●	◐
	Spectracide® Weed Stop® 2x for Lawns Concentrate	*2,4-D 7.57%, Dicamba 0.71%, MCPP 2.73%, Sulfentrazone 0.18%*	◐	◑	◑	○	●	◐
	Bayer Advanced™ All-in-One Weed Killer Ready-to-Spray	*2,4-D 4.85%, Quindorac 1.61%*	◐	◑	◑	○	●	◐
	Hi-Yield® Atrazine Weed Killer	*Atrazine 40.8% Related compounds 2.2%*	◐	◑	◑	○	●	◑
	Ortho® Weed-B-Gon® Spot Weed Killer for St Augustine Lawns	*Atrazine 0.60%*	◐	◑	◑	○	●	◑
	Hi-Yield® 529 MSMA Weed Killer	*MSMA 34.6%*	◐	●	◐	○	○	◑/◐
	Bayer Advanced™ All-in-One Weed Killer	*MSMA 9.81%, 2,4 -D 3.18% MCPP 1.6%, Dicamba .79%*	◐	●	◐	○	○	◑/◐
	Ortho® Weed-B-Gon® Crabgrass Killer for Lawns	*Calcium acid methanearsinate 0.50%*	◐	●	◐	○	○	◑/◐

most toxic

did you know?

Atrazine, the weed killer most often found in weed and feed products, has been found in 70% of the monitoring tests at Austin springs

The City of Austin and the Texas AgriLife Extension Service provide this information as a comparative reference only. Listing of specific product trade names does not constitute an endorsement of their use . Many other pesticides and pesticide products are available and may be suitable for use other than those listed in these tables.

Products rated by Grady J. Glenn, Ph.D., B.C.E., of the Agricultural and Environmental Safety Program, Texas AgriLife Extension service who can be reached for questions at (979) 862-1035. The rating system was developed by Philip Dickey of the Washington Toxics Coalition.

www.growgreen.org

AgriLIFE EXTENSION
Texas A&M System
512-854-9600

Watershed Protection Development Review
512-974-2550

04/09

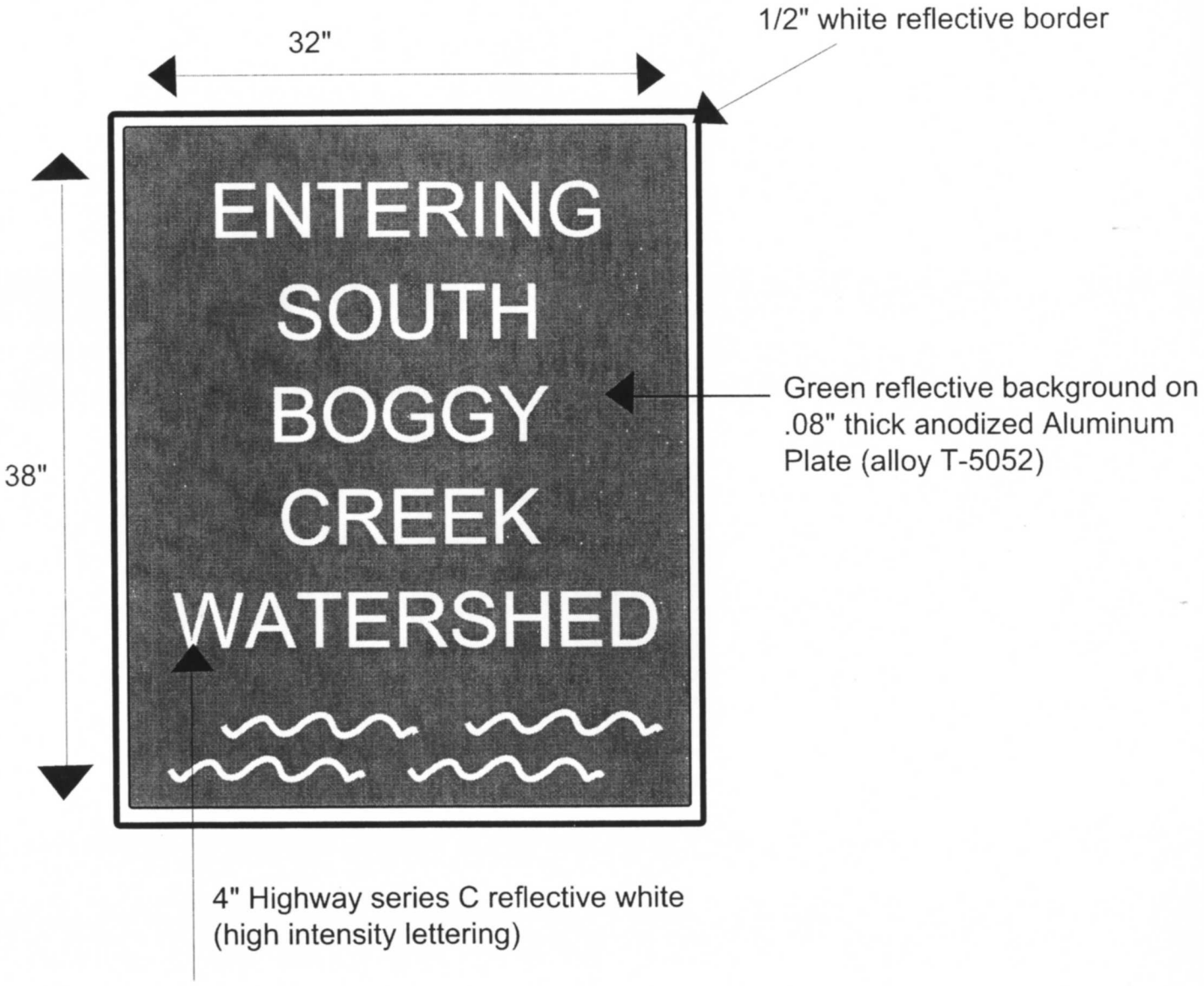
Year 3 Watershed Signs/Locations										
Site #	Road Name	Watershed #1	Watershed #2	Distance 2 X-Rd	Direction	X-Road	Mapsco	MS4 Grid	Date Installed	Comments
1	Bee Creek Road	Lake Travis	Pedernales River	3285'	SE	Pace Bend Road	487C	K03		
2	Bee Creek Road	Lake Travis	Bee Creek	100'	S	Ridgepole Lane	518E	L03		
3	Bliss Spillar Road	Bear Creek	Little Bear Creek	950'	NW	FM 1626	702P	D06		COA- ETJ
4	Bob Wire Road	Lake Travis	Bee Creek	1325'	SE	Cordill Lane	517L	K03		
5	Bois D'Arc	Wilbarger Creek	Cottonwood Creek	900'	SW	Tower Road	530G	L11		Manor- ETJ
6	Brodie Lane	Bear Creek	Slaughter Creek	200'	N	Green Emerald	672X	E06		COA- ETJ
7	Dee Gabriel Collins Road	Cottonmouth Creek	Onion Creek	1600'	NW	Cottonmouth School Road	676J	E09		COA- ETJ
8	Dessau Road	Harris Branch	Gilleland Creek	100'	S	Halmira Estates Drive	467R	N10		COA/Pflugerville- ETJ
9	Fitzhugh Road	Slaughter Creek	Barton Creek	800'	NW	Rutter Road	639D	G04		COA- ETJ
10	Hamilton Pool Road	Pedernales River	Hamilton Creek	200'	W	Stagecoach Ranch Road	515V	K02		
11	Moore Road	Dry Creek	Maha Creek	1000'	NW	Maha Loop Road	737F	C09		COA- ETJ
12	Moore Road	South Fork	Dry Creek	2750'	NW	Blocker Lane	706Z	D09		COA- ETJ
13	Old Lockhart Road	Marble Creek	South Fork	400'	SE	Carl Road	735E	C08		COA/Creedmoor- ETJ
14	Old Lockhart Road	Onion Creek	Marble Creek	2500'	SE	Bradshaw Road	704L	D08		COA- ETJ
15	Pace Bend Road	Pedernales River	Lake Travis	630'	NE	Bee Creek Road	457U	M03		Briarcliff- ETJ
16	Thomas Springs Road	Barton Creek	Williamson Creek	250'	SW	Blue Hill Drive	611A	H05		COA- ETJ
17	Torro Canyon Road	Bee Creek	Lake Austin	100'	S	Stone Canyon Drive	553R	J07		COA- ETJ
18	Twin Creeks Road	Onion Creek	Bear Creek	100'	NW	Arroyo Doble	703T	D07		COA- ETJ

Amount of Each Watershed Name Sign Needed

4- Lake Travis
3- Bear Creek
3- Pedernales River
3- Onion Creek
3- Bee Creek
2- Slaughter Creek
2- Dry Creek
2- South Creek
2- Marble Creek
2- Barton Creek
1- Wilbarger Creek
1- Cottonmouth Creek
1- Harris Branch
1- Little Bear Creek
1- Cottonwood Creek
1- Gilleland Creek
1- Hamilton Creek
1- Maha Creek
1- Williamson Creek
1- Lake Austin

Watershed Sign Specifications

(Drawing not to scale)



Driveway Permit Technical Standards

Driveways must be located no closer to the corner of intersecting rights of way than 60 percent of the parcel frontage or 50 feet whichever is less.
A maximum of two (2) driveway approaches are allowed per street per property. The distance between driveways must be 100 feet center to center on non-curb and gutter streets and 35 feet inside edge to inside edge on curb and gutter streets.
Driveway approaches may be paved with a hard surface such as concrete or asphalt.
The angle of approach shall be approximately 90 degrees.
Driveways shall be a minimum of 12' and a maximum of 25' wide at he R.O.W line not including the radius.
Ditch line grading and installation of driveways must insure positive drainage for entire length of property.
Grade on all driveways approaches shall not exceed 15% unless otherwise approved by Travis County representatives.
The Line-of-Sight (L.O.S.) requirement on a typical 35 MPH roadway is 250'.
Install erosion/sediment controls for construction activities when required/requested by Travis County.

Driveway Permit Submittal:

Driveway Permit Application Form
A fully completed Driveway Permit Application Form must be turned in to the Travis County TNR Permit Center along with a Site Plan with the information described below.

Site Plan
A site plan showing property lines, proposed and/or existing improvements, guardrails, mailboxes, curb inlets, proposed driveway(s), nearby intersecting streets and distance of driveway(s) from lot corners. If access is obtained by way of another property, include a copy of the access/roadway easement that allows this access. Applicant accepts responsibility/liability for damages to any/all properties associated with the installation.

For more detailed instructions and a sample application please visit the Permits section of www.co.travis.tx.us

Driveway Permit Inspection

Physical identification of property must be made within 48 hours after application submitted such as street marking or address board, which is preferred so it can double as a place to post permits and notices.

The posted driveway permit after issuance must be readily visible to meet permit requirements.

Rural Driveway Approach Inspection Requirements
A field assessment will be done upon permit application to ensure the design meets roadside conditions. After permit approval, a pre-pour inspection is required to ensure construction will meet standards before final completion.

Driveway Inspection Requests:
Contact Travis County TNR @ 854-4215 questions and/or concerns on your driveway approach.

For pre-pour inspection requests 854-4438

Failure to contact Travis County TNR for a required pre-pour inspection, or failure to construct the driveway approach to the approved County permit and standards may result in a notice to remove and replace.

After construction to County standards it is the responsibility of the property owner to maintain the structural and functional integrity of the driveway approach.

Travis County Residential Driveway Permit

A Travis County Driveway in Right-of-Way (R.O.W) Permit is required for constructing a driveway approach onto a Travis County roadway. The driveway approach is the portion of the driveway between the property line and the road pavement within the County R.O.W.

Travis County requires permit application, review, and inspection to ensure county standards for proper drainage, construction, and safety are followed, to reduce R.O.W erosion and maintenance, and maintain traffic safety.

This Brochure describes requirements for residential driveways, including:

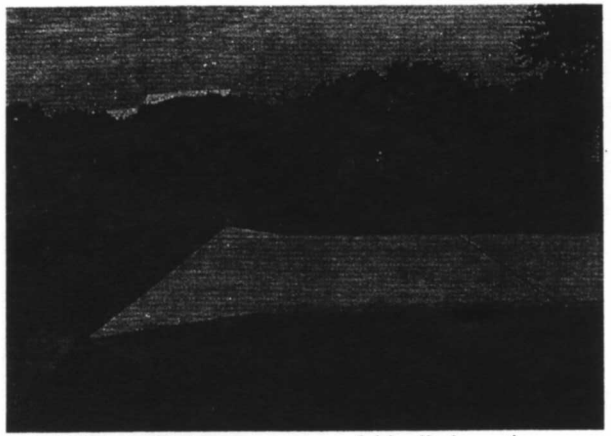
- Types of Driveway Approaches allowed
- Driveway Technical Standards
- Driveway Permit Submittal Requirements
- Driveway Permit Inspection Requirements
- Non-Residential/Commercial driveways are reviewed and permitted in the Site Development Permit process.
- Driveway approaches for City-annexed streets, State highways, and privately maintained streets DO NOT require a County permit.

To submit a Travis County Driveway in R.O.W Permit Application and for more information on how to obtain a Permit, contact the Travis County Transportation and Natural Resource Department's Development Permit Office at 512-854-4215 or visit the Permits Counter at:

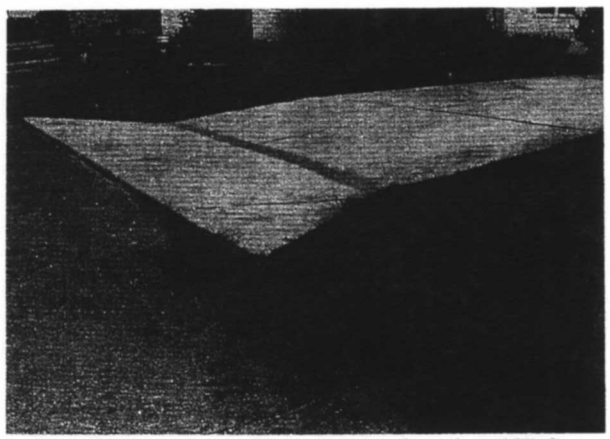
Executive Office Building
411 W 13th Street - 8th floor Austin, TX 78701
Office Hours: 8:30AM to 4:00PM weekdays

riveway Approaches on Rural Roads

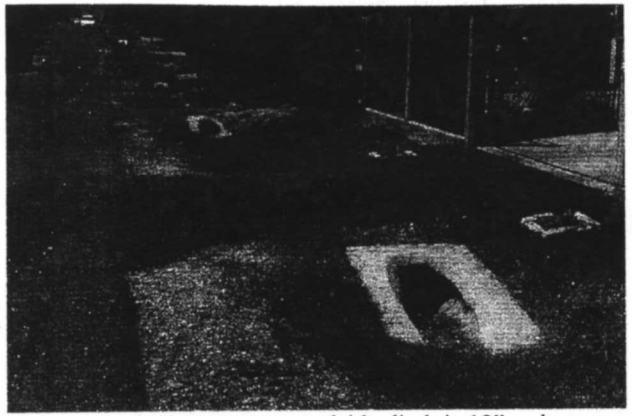
riveway Approach design for rural roads with roadside ainage must match individual roadside conditions. Three ısic types of rural approach designs are allowed: raight Tie –in, Dip-Style, and Culvert-Style.



traight Tie-in Driveway – no roadside ditch section.



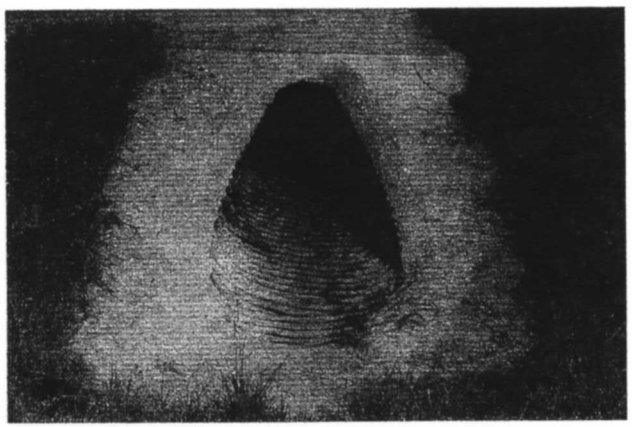
ip Style Driveway – roadside ditch is less than 12" deep.



Culvert Style Driveway – roadside ditch is 12"or deeper.

Key standards for Culvert Style Driveways:

- Corrugated Metal Pipe (CMP) is the only culvert pipe material permitted for use in the R.O.W.
- Culvert pipe must be at least 18" diameter, or a 15" high x 21" wide oval pipe (Design 2), placed at the proper grade to ensure positive roadside drainage.
- Culvert style driveways must include concrete safety end treatments to protect the culvert pipe and to ensure traffic safety (below).



Concrete Safety End Treatment

Driveway Approaches on Curb and Gutter Roads

Driveway Approaches for urban roads with curb and gutter drainage are required to meet one basic design standard.

Driveway Approach on Curb & Gutter Road

Key standards for Curb and Gutter Driveways:

- ADA (Americans with Disabilities Act) requirements for sidewalk cross section must be complied with. That is, grade of driveway may not exceed 2% were the sidewalk crosses the driveway.
- If a curb inlet is present there must be (10) ten feet between the inlet opening and the edge of the driveway curb return.
- Municipal Extra Territorial Jurisdictions (ETJs) and Travis County typically follow the same design standards for Driveway Approaches on Curb and Gutter Streets.

TCTV Broadcast Plan BMP
Storm Water Public Education Videos List

Broadcast Priority:
1) First Priority – priority topic justifying more broadcast time
2) Second Priority – lesser priority topic justifying less broadcast time

Allowable Broadcast formats:
DVC cam; DVC pro; Mini DV; DVD

TCTV Channel 17 Storm Water Video Broadcast List				
Title	**Provider/ Contact**	**Length (min:sec)**	**Current format**	**Priority**
After the Storm	Weather Channel/EPA	28.00	TCTV has DVD	1
Pointless Pollution	LCRA	27:40	DVD	1
A Run Unto the Sea	LCRA	56:51	DVD	2
The Water Never Got This High Before	LCRA	12:10	DVD	2
Clean Water: It Starts With You	LCRA	12:15	DVD	1
Ready for the Next Flood	LCRA	17:00	DVD	1
Blind Man's Vision	LCRA	4:53	DVD	2
Innovative Stormwater Runoff Practices	LCRA	7:00	DVD	1
Grow Green Program	TNR/ COA	0.15 x 4	Media DVD	1
Scoop the Poop	City of Austin	0.30	Media DVD	1
Texas The State of Water	TX Prks/Wildlife	58:00	DVD	1
Texas The State of Water- Finding a Balance	TX Parks & Wildlife	56:46 11:49, 9:20, 9:00, 14:49	2 DVDs	1, 2
Texas The State of Flowing Water	TX Parks & Wildlife	57:00	DVD	1
Texas The State of Springs	TX Parks & Wildlife	58:00 10:25, 9:39, 9:45, 8:25	2 DVDs	1, 2
Storm Water Mgmt- Turning Runoff Into a Resource	Water Education Foundation	20:00	Turned in PRF- waiting on order	1

The following written announcement will precede SWMP educational presentations broadcast on Channel 17 (except for the very short clips by themselves):
The following information is presented for public education as part of Travis County's Storm Water Management Program (SWMP) required by the Texas Commission for Environmental Quality (TCEQ). Travis County will broadcast educational information on a variety of storm water related topics, including storm water awareness, pollution prevention and best management practices (BMPs), flood control, water conservation, storm water management, etc.